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G.R.

-Briefing Paper-

Denbigh Experimental Forest

USDA - Forest Service

Established in 1931, the Denbigh Experimental Forest is located in northcentral North Dakota in McHenry County. The USDA-Forest Service acquired 40 acres of the total 636 acres at that time, with the State of North Dakota retaining the other 596 acres. In 1971, the USDA-Forest Service acquired this acreage. However, since 1931, the entire section has been managed as one unit for experimental and other purposes. The original purposes for establishment included the following:

(1) Establish various tree species (primarily conifer) to determine which would grow well for subsequent shelterbelt plantings in the northern Great Plains.

(2) Determine which seed sources of these species were most adaptable in the northern Great Plains.

(3) Determine which methods for site preparation, planting, and care of seedlings would be best for shelterbelt purposes.

During the 1930's, 1940's, and 1960's, over 40 tree species from numerous seed sources from New Mexico to Montana, the Lake States, Europe, and Asia, were planted on the experimental area. Some of these species included Scots and Austrian pine, Siberian larch and Russian-olive from Europe and Asia, red and jack pine from the Lake States, and ponderosa pine, Colorado blue spruce, Black Hills spruce, Rocky Mountain juniper, and Douglas-fir from the plains and western states. Currently about 60 percent of the experimental area has been planted. This area is extremely valuable because no other area like this has been established in the northern Great Plains.

The remainder of the experimental area, primarily in the northeast 1/4 and southeast 1/4, is natural prairie vegetation including several prairie grasses and small clumps of native aspen. In addition, a "natural forty" has been administratively set aside and reserved for botanical studies. The entire experimental area has been fenced since its establishment in 1931. No grazing has been allowed nor have any fires occurred since that time. Except for about 80 acres owned by BLM along the east boundary of the experimental area near the northeast corner, all adjacent ownership is private. All surrounding land is used for cattle grazing.

During the past several years, studies have been initiated with the conifer species. Research in genetics for tree improvement is being carried out cooperatively with the USDA-Agricultural Research Service and the North Dakota Forest Service. Characteristics for superior trees being studied include faster growth and resistance to insect and disease attacks.

Equally as important as the past and current research studies, the experimental area provides nearly all of the conifer seed for the North Dakota Forest Service nursery located 15 miles east of Towner. The nursery, in turn, provides all of the

coniferous seedlings for shelterbelt plantings in North Dakota and part of the seedlings for the neighboring states of Montana, South Dakota, and Minnesota. Each fall, the nursery personnel spend several weeks collecting seed for next year's planting. No other seed sources for production of some 1 1/4 million seedlings each year exist in North Dakota.

There are no developed recreation sites located within the experimental area. Dispersed recreation includes hunting of deer and sharp-tail grouse, hiking, berry picking, and cross-country skiing. A hiking trail for viewing the countryside has been established over several large sand dunes in the southwestern part of the area.

An arboretum containing about 30 species (primarily conifer) from Europe, Asia, and the U.S. was established during 1940-1942. It is used, along with the rest of the planted area, as an outdoor classroom for students from North Dakota State University-Bottineau Campus.

The experimental area is extremely important for wildlife. It provides a variety of food and cover for numerous wildlife species. Over the years, it has become a winter haven for nonmigratory wildlife species, drawing white-tail deer and sharp-tailed grouse and other species from a considerable distance--primarily because of the protection the coniferous stands provide from severe winter storms and because of the readily available food sources. During the remainder of the year, the above species and others utilize this excellent habitat. Raptors, including several hawk and owl species, frequent the area during much of the year.

Management responsibilities are conducted jointly between the Rocky Mountain Forest and Range Experiment Station's Forestry Sciences Laboratory in Lincoln, Nebraska and the Northern Region's Custer National Forest. Whereas research studies are the lab's responsibility, the Custer administers land management activities including protection from fire and insects, protection from grazing including fence maintenance, road and trail maintenance and signing, noxious weed control (primarily leafy spurge), and building maintenance. (A residence, garage, and storage shed were built in 1931 and remain in relatively good condition.) In addition, oil and gas and other mineral management is administered by the Custer National Forest.

In September of 1983, the Custer National Forest entered into a contract with the North Dakota Forest Service for thinning of tree stands, slash burning, insect control, and leafy spurge control for $48,000. In May of 1984, the contract was modified to include building and trail maintenance, road and trail sign construction, renovation and installation. This modification added $3,488 to the contract cost. The contract will be completed, most likely, by December of 1984.

Project work completed includes 36 acres of thinning and pruning in conifer stands; red turpentine beetle spraying in 30 acres of pine stands; 240 acres of leafy spurge control; slash burning; general cleanup; building maintenance; road and trail sign construction, renovation, and installation; and one-fourth mile of trail maintenance including placement of railroad ties for erosion control. The North Dakota Forest Service work crew of eight people from the local area is employed and supervised by the nursery manager at Towner.

For more information on Denbigh Experimental Forest, please contact either of the following persons:

Glenn Roloff
ND Coordinator
Custer National Forest
1824 N. 11th Street
Bismarck, ND 58501

Telephone No:
701-255-4011, ext. 443
(FTS 783-4443)

Glenn Peterson
Project Leader
Rocky Mountain Forest and Range
Experiment Station
Forestry Sciences Laboratory
East Campus, University of Nebraska
Lincoln, NE 68583

Telephone No:
402-471-5178
(FTS 541-5178)